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1st Prize for Best Poster Contest FYP Sem 1 2017/2018

by Dr Mohd Hazreek bin Zainal Abidin

Final year project seminar for semester 1 2017/2018 (FYP seminar, FKAAS) was successfully being organized on 20 December 2017 (Wednesday). Final year project is one of the compulsory course for all final year students with an aimed to train and exposed the students to the world of research. Student under JKIG staff supervision (Student: Taquidin Mohd Jalani, Supervisor: Dr. Mohd Hazreek Zainal Abidin) has won the first prize for the best poster contest at the end of the session. Congratulation to the students, SV and JKIG for the achievement. Furthermore, million thanks also goes to FKAAS higher management (Dean, Deputy Deans and Head of department), committee of FYP (Dr Nor Hayati Abd Ghafar and Co) and all related person for organizing the event smoothly and successful.



CORRELATION OF ELECTRICAL RESISTIVITY VALUE (ERV) WITH BASIC PHYSICAL PROPERTIES OF SOIL FOR MOISTURE CONTENT AND DENSITY ESTIMATION

(1) ABSTRACT
 Geophysics is a branch of geology that studies the earth's internal structure and composition. It is used to determine the physical properties of the earth's subsurface. This study aims to determine the correlation between the electrical resistivity value (ERV) and the basic physical properties of soil, such as moisture content and density. The study was conducted using a Wenner array configuration and a resistivity meter. The results show that there is a strong positive correlation between ERV and moisture content, and a weak negative correlation between ERV and density. The study concludes that ERV can be used as a proxy for moisture content and density estimation in soil.

(2) BACKGROUND OF STUDY
 Geophysics is used to study the earth's internal structure and composition. It is used to determine the physical properties of the earth's subsurface. This study aims to determine the correlation between the electrical resistivity value (ERV) and the basic physical properties of soil, such as moisture content and density. The study was conducted using a Wenner array configuration and a resistivity meter. The results show that there is a strong positive correlation between ERV and moisture content, and a weak negative correlation between ERV and density. The study concludes that ERV can be used as a proxy for moisture content and density estimation in soil.

(3) OBJECTIVES
 To characterize soil sample based on basic physical properties of soil.
 To perform laboratory resistivity test using soil low electrical resistivity.
 To correlate electrical resistivity value with soil moisture content and density.

(4) METHODOLOGY
 Geophysical site investigation (GSI) is determining the nature of soil at the site and its stratification. (Prize list Khaldun, 2013).
 Commonly, it was performed using conventional drilling technique such as auger, borehole, core, rotary, trial bore, mechanical probe test and etc.
 However, conventional technique experienced some limitations such as high cost, time consuming, less data and destructive testing nature.
 Nowadays, geophysics has widely used in engineering, environment, mining, archeology (Study by Newlands et al. 2015) and etc.

(5) RESULTS & DISCUSSION
 TABLE 1: CORRELATION COEFFICIENT (R)
 TABLE 2: THE TRENDS OF THE RESISTIVITY (OHM.M)
 TABLE 3: RESULTS VERIFICATION FOR GEOSPHERICAL AND PHYSICAL PROPERTY

(6) CONCLUSIONS
 The basic physical properties of soil was successfully performed using a soil characterization test and soil sample was classify as Clayey SILT.
 The resistivity value (ERV) for soil sample studied was successfully performed using Soil low electrical resistivity test.
 The correlation between ERV with basic properties of soil is inverse. The Hierarchy One Malaysia (OHM) in Batu Pahat, Johor was successfully being analyzed using SPSS software and Microsoft Excel.

(7) RECOMMENDATIONS
 Use the different types of soil (clay, sand, gravel and peat) soil.
 Use the different type of water used (tap water, mineral water, sea water and etc.).
 Use the different conditions (lowest level, temperature, water percentages and etc.).

(8) REFERENCES
 (1) Prizet, A. B., & R. S. (2015). Geophysics of Geotechnical Engineering, Second Edition. Elsevier, Amsterdam, 1000 pp.
 (2) Prizet, A. B., & R. S. (2015). Geophysics of Geotechnical Engineering, Second Edition. Elsevier, Amsterdam, 1000 pp.
 (3) Prizet, A. B., & R. S. (2015). Geophysics of Geotechnical Engineering, Second Edition. Elsevier, Amsterdam, 1000 pp.
 (4) Prizet, A. B., & R. S. (2015). Geophysics of Geotechnical Engineering, Second Edition. Elsevier, Amsterdam, 1000 pp.
 (5) Prizet, A. B., & R. S. (2015). Geophysics of Geotechnical Engineering, Second Edition. Elsevier, Amsterdam, 1000 pp.

Symposium on Geophysical Method in Engineering and Environmental Studies



@ Symposium on Geophysical Method in Engineering and Environmental Studies was organized by Faculty of Engineering Technology, Universiti Malaysia Pahang (UMP) on 17 and 18 of January 2018. Assoc. Prof. Dr. Aziman Madun and Dr Mohd Hazreek Zainal Abidin were invited as a speaker during the session. The aim of this intellectual session is to share and discuss the experienced regarding geophysics in engineering and environmental studies. Participant joining the event were from industries and universi-

Geothermal Research Activity

by Dr Mohd Hazreek bin Zainal Abidin

Geothermal research using geophysical method at Sungai Gersik, Muar Johor was conducted by Department of Mineral and Geoscience Malaysia from 20 to 26 of January 2018. Representatives from JKIG, Faculty of Civil Engineering and Environment Engineering (Assoc. Prof. Dr. Aziman Madun and Dr. Mohd Hazreek Zainal Abidin) were invited to join and experience the exploration. Geophysical tools used during the research were electrical resistivity (ER) and transient electromagnetic (TEM). The aim of the research was to protect and preserve the existing hot spring due to the future planning and development of the surrounding areas.



JKIG Academic Talk 1/2018- "Contaminated Soil Remediation and Electro-containment"

by PM Dr Felix Ling Ngee Leh

Department of Infrastructure and Geomatic Engineering (JKIG), FKAAS had successfully organized its first academic talk on 18 March 2018 (Sunday). The title of the academic talk is "Contaminated Soil Remediation and Electro-containment". The talk is delivered by Dr. Maria Elektorowicz from Concordia University, Canada. Dr. Maria Elektorowicz is the Professor in Environmental Engineering in the Department of Building, Civil and Environmental Engineering at Concordia University. She also worked at McGill (Canada), Algeria, Australia and Poland. She graduated from the Warsaw Institute of Technology (Poland). She has been investigated electrokinetic phenomena and their various applications during last 25 years leading to many publications and over 20 patents and registered inventions.

Contaminated Soil Remediation and Electro-containment

18 MARCH 2018
2.00 P.M.
-4.30 P.M.

BY PROF. MARIA ELEKTOROWICZ
CONCORDIA UNIVERSITY, CANADA

VENUE: BILIK TAKLIMAT,
FKAAS
ORGANIZED BY:
JKIG, FKAAS, UTHM

FREE ADMISSION

Banner of JKIG Academic Talk 1/2018

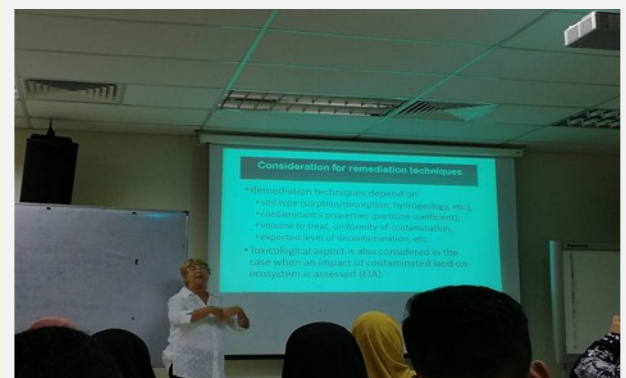


The organizer - Assoc. Prof. Dr. Aziman Madun, Head of JKIG rewarding speaker with souvenir during welcoming section

Dr. Elektorowicz served as a Chair of the RESOL (network of researchers for contaminated soil) in Quebec and the Environmental Division of Canadian Society for Civil Engineering as well as a Director of Departmental Graduate and Undergraduate Programs. She is the recipient of many international and national awards including the Albert E. Berry Medal - the highest Canadian recognition in Environmental Engineering.

The talk was at-

tended by 31 students who are taking subject Geo-environment and also some postgraduate students who are involved in relevant research. Apart of it, some of the lecturers also attended the talk namely Prof. Dr. Ahmad Tarmizi bin Abdul Karim, Prof. Dr. Ir. Amir Hashim bin Mohd. Kassim, Assoc. Prof. Dr. Aziman Ma-



Invited speaker Prof. Dr. Maria Elektorowicz while

dun, Dr. Felix Ling Ngee Leh, Dr. Azra Munirah bt. Mat Daud, Dr. Nur Shaylinda bt Mohd Zin and Dr. Mohd Khaidir bin Abu Talib. The audience were exposed to different important aspects that designer needs to consider when handling contaminated site and also design electro-containment system. In addition to it, Dr. Elektorowicz also shared some of the on-going electro-containment research in her university.

At the end of the talk, the speaker has been rewarded with some souvenir and certificate of appreciation as a token of appreciation. The industrial talk was successfully in educating the audience on the current development in electro-containment.



The UTHM representative - Prof. Dr. Ahmad Tarmizi bin Abdul Karim rewarding speaker with souvenir and certificate of appreciation

Slope Monitoring of KTMB Railway Track from Gemas to Krai with SPAD

by PM Dr Aziman bin Madun

On 20th to 22th March 2018, Keretapi Tanah Melayu Berhad (KTMB) and Land Transport Public Commission (SPAD) conducted an inspection for main rail track for East Coast line. SPAD has invited Universiti Tun Hussein Onn Malaysia (UTHM) to take part in the inspection trip as part of research collaboration between SPAD-UTHM in railway engineering. This research collaboration focusing on the slope assessment along the East Coast line (Gemas to Krai) which accounted about 442Km.



UTHM's collaboration research team lead by Dr Nor Azizi Yusof, and members by Associate Professor Dr. Aziman Madun (Lecturer), En. Adi Hizami bin Mohammad Tamin (PhD student) and Noor Fitriah Faaizin binti Abdul Latif and A'isyah Mardhiyyah binti Shaharoshaha (undergraduate students). Two representatives from SPAD, Encik Mohd Ramzan bin Hj Ahmad and Encik Shawal Ismail were responsible for the track inspection. The aim of the trip were to monitor the track condition and assessing the slope condition. This journey has experienced travelling using mini train.



Research Collaboration with JPS Batu Pahat

by PM Dr Aziman bin Madun



UTHM team with JPS district engineer

A series of meeting with the Drainage and Irrigation Department (JPS) Batu Pahat was led by the district engineer of Batu Pahat, En. Mohamad Asnawi and engineer Puan Maisara with UTHM team. The team comprises of lecturers: Prof. Ir. Dr. Amir Hashim Bin Mohd Kassim, Dr. Nor Azizi bin Yusof, Assoc. Prof. Dr. Aziman bin Madun, Dr. Mohd Azlan Bin Mohd Yusoff, Dr. Mohd Khaidir bin Abu Talib and the final year students: Pettruss Gudam and Nur Amanina. The

study is on bund assessment along the coastal line and river water quality. Photo below shows the rock bund at Pantai Sungai Lurus, Senggarang, Johor.

"JKIG STALKER" 



Group photo taken together with Prof. Dr. Maria Elektrowicz after academic talk



Rock Bund at Pantai Sungai Lurus



Hot spring Sungat Gerisek, Muar, Johor



Electrical resistivity (ER)